

VAL-MB-T2-1000DC-2+V-R - Type 2 surge arrester



1376162

<https://www.phoenixcontact.com/us/products/1376162>

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Surge protective device, acc. to type 2/class II, for grounded, unipolar DC supply systems up to 1100 V DC, for DIN rail mounting, with remote indication contact.

Your advantages

- Safe operation of DC voltage supply systems thanks to reliable protection against surge voltages
- For use in grounded, unipolar DC supply systems
- Highly versatile with a maximum altitude up to 6000 m (amsl)
- Space-saving installation, thanks to the compact design
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1376162 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Product key | CL1391 |
| GTIN | 4063151740320 |
| Weight per piece (including packing) | 531.1 g |
| Weight per piece (excluding packing) | 531.1 g |
| Country of origin | DE |

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Technical data

Product properties

| | |
|--------------------------------|-----------------------------------|
| Product type | Surge arrester |
| IEC test classification | T2 |
| EN type | T2 |
| IEC power supply system | DC |
| Type | DIN rail module, one-piece |
| Number of positions | 2 |
| Surge protection fault message | Optical, remote indicator contact |
| Number of ports | One |

Insulation characteristics

| | |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree | 2 |

Electrical properties

Indicator/remote signaling

| | |
|--------------------|---|
| Connection name | Remote fault indicator contact |
| Switching function | Changeover contact |
| Operating voltage | 5 V AC ... 250 V AC (Altitude ≤ 2000 m (amsll)) 5 V DC ... 30 V DC (200 mA DC) |
| Operating current | 5 mA AC ... 1.5 A AC 5 mA DC ... 1 A DC |

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Screw thread | M5 |
| Tightening torque | 3 Nm |
| Stripping length | 16 mm |
| Conductor cross-section flexible | 2.5 mm ² ... 35 mm ² |
| Conductor cross-section AWG | 14 ... 2 |

Remote fault indicator contact

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Screw thread | M2 |
| Tightening torque | 0.25 Nm |
| Stripping length | 7 mm |
| Conductor cross-section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross-section rigid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 28 ... 16 |

Dimensions

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| | |
|---------------------|---------------------------------|
| Dimensional drawing | |
| Width | 71.2 mm |
| Height | 120 mm |
| Depth | 65.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 4 Div. |

Material specifications

| | |
|--|-----------------|
| Color | gray (RAL 7042) |
| Flammability rating according to UL 94 | V-0 |
| CTI value of material | 600 |
| Insulating material | PA 6.6 PBT |
| Housing material | PA 6.6 |

Protective circuit

| | |
|--|--|
| Mode of protection | (DC+) - (DC-) (DC+/DC-) - PE |
| Direction of action | (L+)-PE & (L-)-PE & (L+)-(L-) |
| Nominal voltage U_N | 1000 V DC |
| Maximum continuous operating voltage U_C | 1100 V DC |
| Rated load current I_L | 40 A |
| Protective conductor current I_{PE} | $\leq 100 \mu\text{A DC}$ $\leq 540 \mu\text{A AC}$ |
| Standby power consumption P_C | $\leq 150 \text{ mVA}$ |
| Nominal discharge current I_n (8/20) μs | 20 kA |
| Maximum discharge current I_{max} (8/20) μs | 40 kA |
| Total discharge current I_{Total} (8/20) μs | 40 kA |
| Short-circuit current rating I_{SCCR} | min. 1 kA DC (with maximum backup fuse 40 A gG/1200 V DC) max. 4 kA DC (with maximum backup fuse 40 A gG/1200 V DC) |
| Voltage protection level U_p | $\leq 4.5 \text{ kV}$ |
| Residual voltage U_{res} | $\leq 4.5 \text{ kV}$ (at I_n) $\leq 3.3 \text{ kV}$ (at 3 kA) $\leq 3.6 \text{ kV}$ (at 6.25 kA) $\leq 3.8 \text{ kV}$ (at 10 kA) $\leq 4.2 \text{ kV}$ (at 15 kA) $\leq 5.4 \text{ kV}$ (at 40 kA) |
| Response time t_A | $\leq 25 \text{ ns}$ |
| Max. backup fuse with branch wiring | 40 A (gG / 1200 V DC) |

Environmental and real-life conditions

Ambient conditions

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| | |
|---|---|
| Degree of protection | IP20 (only when all terminal points are used) |
| Ambient temperature (operation) | -40 °C ... 80 °C |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Altitude | ≤ 6000 m (amsl) |
| Permissible humidity (operation) | 5 % ... 95 % |
| Shock (operation) | 50g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z) |
| Vibration (operation) | 5g (5 - 500 Hz/2.5 h/X, Y, Z) |

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-31 |
| Note | 2018 |
| Standards/specifications | EN 61643-31 |
| Note | 2019 |

Mounting

| | |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

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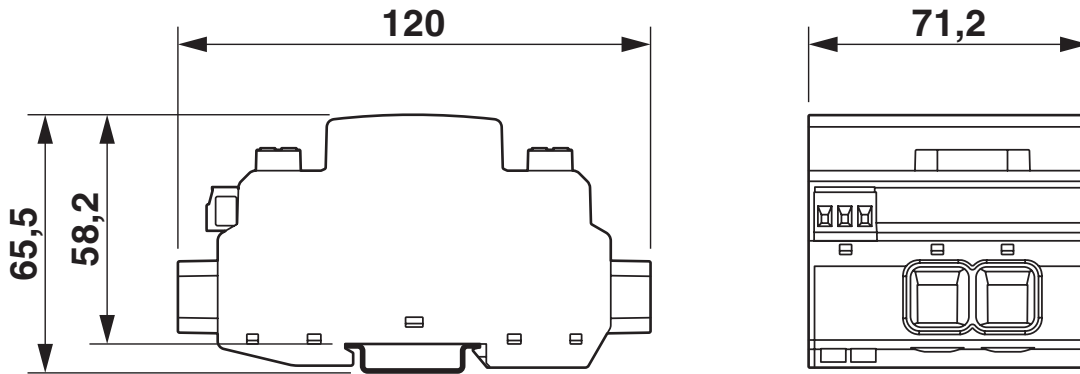


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Drawings

Dimensional drawing



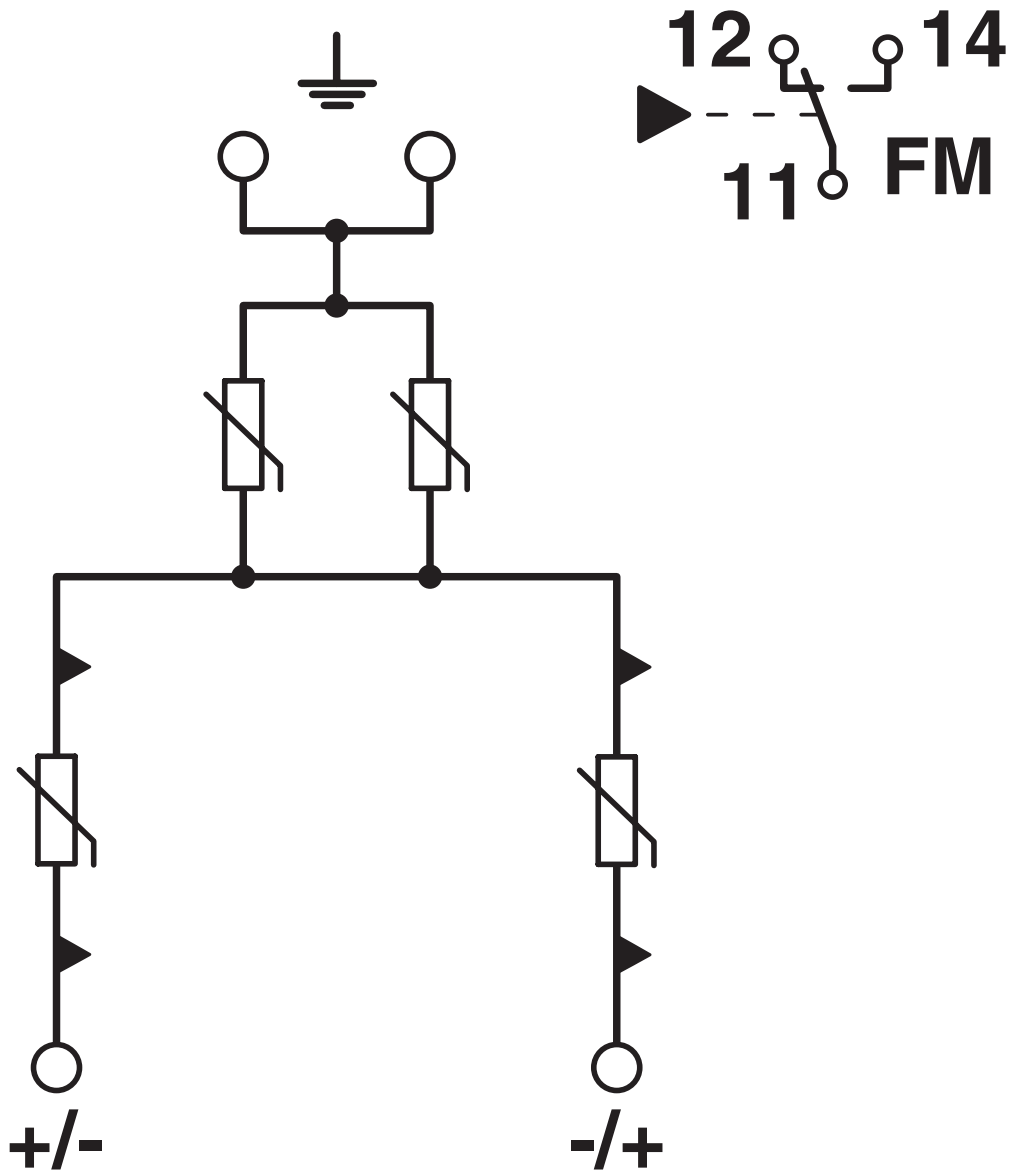
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Circuit diagram



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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27171302 |
| ECLASS-15.0 | 27171302 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC000941 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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